

**REMARKS**

Claims 1-10, 17-19 and 21-22 are pending. Claim 1 has been amended by replacing the range of "50 mol% or less" to be simply less than 50 mol%.

No new matter has been added by way of the above-amendment.

**Rejection Under 35 U.S.C. 103(a) Over Brust in View of Nishikawa**

Claims 1-18 and 22 are rejected under 35 U.S.C. 103(a) as being obvious over the combination of Brust (U.S. Patent No. 6,100,019, hereinafter "Brust '019") in view of Nishikawa (U.S. Patent No. 6,007,977, hereinafter "Nishikawa '977"). Applicants respectfully traverse the rejection.

In view of the extensive prosecution history, Applicant now provides a brief overview for the Examiner's convenience.

The present invention is drawn to a silver halide photographic emulsion comprising grains, wherein not less than 85% of the total projected area of the grains are occupied by tabular grains meeting requirements (i) to (v) below:

- (i) silver bromochloroiodide grains having (111) faces as major surfaces,
- (ii) hexagonal grains having a ratio of the length of an edge having the maximum length to the length of an edge having the minimum length of not more than 2,
- (iii) perfect epitaxial grains having a total of six epitaxial junctions each existing only in each of six apex portions of the hexagonal grains,
- (iv) the silver chloride content is 1 to 6 mol%, and

(v) the silver iodide content is 0.5 to 10 mol%.

In previous communications, Applicant has provided the Examiner with multiple reasons why the inventive emulsion comprising tabular grains meeting requirements (i) to (v) is patentable over Brust '019 and Nishikawa '977. However the Examiner has maintained her position that the present invention remains obvious. Accordingly, in the February 7, 2005 Amendment, Applicant has further amended claim 1 to recite that not less than 85% of the total projected area of the grains are occupied by tabular grains wherein the silver chloride content of the epitaxial portion is 50 mol% or less. This limitation was added to distinguish the invention over the "greater than 50 mol% of chloride" teaching at column 3, line 1 of Brust '019. However, claim 1 of the present invention and the teachings of Brust '019 still intersect at the 50% limit of the ranges. The Examiner notes this intersection in her Response to Arguments at page 4, lines 18-21 of the Office Action:

Applicant has argued that the Brust reference teaches a high chloride epitaxy having 50 mol% or more of silver. The instant claims recite the limitation that the epitaxies comprise chloride in an amount of 50 mol% or less, which falls within the scope of the teaching of the Brust et al. reference.

This now brings us to the current Response.

In response to the Examiner's position, Applicant has further amended claim 1 to recite that the chloride is present in a concentration of "less than 50 mol%" so that there is no overlap of the claimed invention and the teachings of Brust'019.

In addition, Nishikawa '977 has been cited for teaching the ratio of side lengths of the grains and the COV of ECD of the grains. Accordingly, Nishikawa '977 fail to cure the deficiencies of Brust '019.

As the MPEP directs, all the claim limitations must be taught or suggested by the prior art to establish a *prima facie* case of obviousness. See MPEP § 2143.03. Since Brust '019 and Nishikawa '977 fail to teach or fairly suggest that not less than 85% of the total projected area of the grains are occupied by tabular grains wherein the silver chloride content of the epitaxial portion is less than 50 mol%, a *prima facie* case of obviousness cannot be said to exist.

In addition, Applicant respectfully submits that Brust '019 fails to teach or fairly suggest that increasing the epitaxy of the crystals in the emulsion would improve the **combination** of increased sensitivity and decrease in fog. Brust '019 is silent with respect to the relationship between the epitaxy of the crystals and the fog. Accordingly, the skilled artisan would reasonably conclude that increasing the epitaxy of the crystals would have no effect on the fog (or the combination of sensitivity and fog).

As is well known, a high sensitivity and low fog are required as preferable properties of a photographic light-sensitive material. The Examiner points out that the

increase in the sensitivity achieved by the present invention is within an expected level. However, Applicant stresses that it is important to evaluate properly both of the effects of the increase in sensitivity and the decrease in fog which are achieved at the same time. In order to evaluate both of these effects, the parameter of the sensitivity/fog ratio was considered, and when the sensitivity/fog ratio was calculated with respect to the results shown in FIG. 1 of the previously filed Declaration dated June 12, 2003, the following results were obtained.

Ratio of Perfect Epitaxial Grains in the Emulsion	50	70	85	90	95
Sensitivity/Fog Ratio	800	912	1500	1709	1773

From the above-indicated results, it can be understood that when the ratio of the perfect epitaxial grains is 85% or higher, the sensitivity/fog ratio, which is an important parameter in the actual photographic properties, shows an unexpected increase of at least 64%  $[(1500-912)/912 \times 100]$  from the values for the perfect epitaxial grains ratio of 70% (recall that the closest operative embodiment of Brust '019 is Example C having a perfect epitaxial grains ratio of 69%) to the inventive minimum required 85%. This unexpected effect is not suggested by Brust '019.

Further, another advantageous effect of the present invention, that is, the decrease in fog during storage, is clear from FIG. 2 of the previously filed Declaration, which indicates that the fog is significantly decreased in the scope of the present invention. This significant effect is not suggested by Brust '019 either.

Accordingly, even if a *prima facie* case of obviousness were to exist, which it does not, the evidence of unexpected results negates the *prima facie* case.

Furthermore, Applicant respectfully submits that Brust '019 merely suggests that increasing the epitaxy would increase the sensitivity. Brust '019 and Nishikawa '977 fail to teach the skilled artisan how to obtain such high epitaxies. Brust '019 states a goal but provides no means for obtaining that goal. It was the present inventor who has diligently pursued this goal and was the first to achieve the goal by means never before conceived.

Brust '019 discloses a process of conducting in a single reaction vessel selective site high chloride epitaxy deposition as a continuation of host high bromide {1111} tabular grain emulsion precipitation. Brust '019 further discloses that a host tabular grain emulsion is precipitated accounting for 0.05 to 1.5 moles of silver per liter of dispersing medium. Any iodide at the major faces of the tabular grains is uniformly distributed and any iodide in a surface region of the grains amounts to less than 7 mole, based on silver in the surface region. Until epitaxy is formed, the pH is held in the range of 3 to 8. Gelatino-peptizer in an amount of 1 to 40 grams per Ag mole is added to the

emulsion. Chloride ions in the range of from 0.03 to 0.15 mole per liter is dispersed in the emulsion. pBr is held in the range of from 3.0 to 3.8 until epitaxy is formed. Iodide ion in a concentration of from  $5 \times 10^{-6}$  to  $1 \times 10^{-4}$  mole per square meter of grain surface area is uniformly adsorbed to the major surfaces of the tabular grains.

Nishikawa '977 discloses aryldialkylmethanes such as cumene that are converted to the corresponding hydroperoxides by reaction with oxygen in the presence of a promoter which may be an alkali metal borate such as borax, an alkali metal salt of a polymer such as an acrylic polymer, or an alkaline reagent in combination with a specific proportion of added water or water of hydration, also exemplified by borax.

Brust '019 indicates that the maximum ratio of silver halide grains in which epitaxies are formed at all of the six corners of each grain is 69% of all the grains. See column 14, TABLE 1, Example C in Brust '019.

Nishikawa '977 discloses tabular grains containing AgCl in the outermost layer, characterized by a limitation to the aspect ratio and to the structure of the grains. Nishikawa '977 further discloses having dislocation lines. However, Nishikawa '977 makes no mention of tabular grains having epitaxial junctions, one of the features to which the present invention is directed.

The present invention discloses a silver halide photographic emulsion comprising grains, wherein not less than 85% of the total projected area of the grains are occupied by tabular grains meeting the six requirements as claimed in claim 1. These

grains cannot be obtained by the techniques disclosed in the prior art or by Brust '019 and Nishikawa '977. See the present written description, page 94, TABLE 1, and the detailed description on page 95.

Applicant is aware that while a reference must enable someone to practice the invention in order to anticipate under §102(b), a non-enabling reference may qualify as prior art for the purpose of determining obviousness under §103. *Reading & Bates Constr. Co. v. Baker Energy Resources Corp.*, 223 USPQ 1168 (Fed. Cir. 1985). Accordingly, Applicant is not submitting that the rejection is nontenable because the present invention is not enabled by the teachings of Brust '019 and Nishikawa '977. Applicant is submitting that the paucity of disclosure with respect to the production of high epitaxy emulsions by Brust '019 and Nishikawa '977 must be taken into consideration by the Examiner in determining obviousness. A reference that lacks enabling disclosure ... may qualify as a prior art reference under §103, **but only for what is disclosed in it**" (emphasis added), *see Beckman Instruments Inc. v. LKB Produkter AB*, 13 USPQ2d 1301 (Fed. Cir. 1989). Brust '019 and Nishikawa '977 do not make the present invention obvious, since the assertion of a goal (high epitaxy) with nothing more cannot block patentability for one who achieves that goal.

Accordingly, withdrawal of the rejection is respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to

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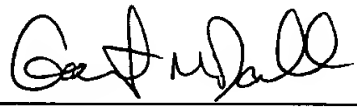
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allowance is warranted. A Notice to that effect is earnestly solicited.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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